

10/622,970

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Error	Ref #
	BRS	4	"022970".ap.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/22 12:17				S2
	BRS	10	((DCT "discrete cosine") with ((error over\$1flow under\$1flow) near3 (detect\$3 identifi\$7)) with (flag interrupt indicat\$3 noti\$7)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/22 12:43				S3
	BRS	8884	((error over\$1flow under\$1flow) near3 (process\$3 handi\$3)) with (flag interrupt indicat\$3 noti\$7)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/22 12:43				S4
	BRS	15	(MPEG with DCT with channel)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 11:43				S5
	BRS	15	(MPEG with DCT with "channels")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 11:45				S6
	BRS	48	(video with (stream) with (multiple adj1 channels))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:10				S7
	BRS	21	S7 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 12:06				S8
	BRS	300	((video MPEG) with (colo\$1r adj1 channel))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 12:06				S9
	BRS	236	S9 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 12:49				S10
	BRS	119	(video MPEG) with ((multichannel multiple\$1channel) near3 (encod\$3 compress\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 12:49				S11
	BRS	76	S11 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 13:29				S12

	Type	Hits	Search Text	Dbs	Time Stamp	Comments	Error Definition	Errors	Ref #
12	BRS	141	((MPEG video) near3 (encod\$3 compress\$3)) with (over\$1flow with under\$1flow)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 13:29				S13
13	BRS	101	S13 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 13:57				S14
14	BRS	31	(S13 and (flag interrupt)) and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 13:32				S15
15	BRS	155	((encod\$3 compress\$3) with ((over\$1flow under\$1flow) near3 (detect\$3 handl\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 13:57				S16
16	BRS	137	S16 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 14:00				S17
17	BRS	1	(S16 same (flag interrupt)) and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 14:01				S18
18	BRS	39	(S16 and (flag interrupt)) and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 14:01				S19
19	BRS	7	(video MPEG) same (under\$1flow near3 (handl\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/27 16:21				S20
20	BRS	15	(error with (indicat\$3 flag\$3 id identit\$7) with (multiple adj1 channels))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:43				S21
21	BRS	11743	(error adj1 (identifier code)) with (cod\$3 compress\$3 MPEG video)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:44				S22
22	BRS	0	(error adj1 identifier) with (cod\$3 compress\$3 MPEG video) with (interrupt flag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:48				S23

	Type	Hits	Search Text	DBs	Time Stamp	Com ments	Error Defi nition	Error s	Ref #
23	BRS	538	((error adj1 (identifier code)) with (cod\$3 compress\$3 MPEG video)) with (interrupt flag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:45				S24
24	BRS	17	((error adj1 identifi\$6) with (cod\$3 compress\$3 MPEG video)) same (interrupt flag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:46				S25
25	BRS	11	((error adj1 identifi\$6) with (cod\$3 compress\$3 MPEG video)) with (interrupt flag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:46				S26
26	BRS	19	(error adj1 identifier) with (cod\$3 compress\$3 MPEG video)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 10:00				S27
27	BRS	292	(error adj1 code) with (compress\$3 MPEG video)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:54				S28
28	BRS	124	(error adj1 code) with (compress\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:54				S29
29	BRS	31	(error adj1 code) with (MPEG)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:55				S30
30	BRS	182	(error adj1 code) with (video)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 09:55				S31
31	BRS	27	S30 and @ad < "20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 11:13				S32
32	BRS	201	(error near3 identifier) with (cod\$3 compress\$3 MPEG video)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 10:01				S33
33	BRS	18	(error near3 identifier) with (compress\$3 MPEG video)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 10:01				S34

	Type	Hits	Search Text	DBs	Time Stamp	Error Definition	Error Messages	Ref #
34	BRS	28	(error near3 flag) with poll\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 11:13			S35
35	BRS	20	S35 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 12:30			S36
36	BRS	852	(poll\$3 with driver)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 12:29			S37
37	BRS	37	(poll\$3 with driver) and (error near3 flag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 12:30			S38
38	BRS	1	(poll\$3 with driver) same (error near3 flag)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 12:30			S39
39	BRS	28	S38 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 15:44			S40
40	BRS	274	((processor CPU) with (I/O adj1 buffer)) and (memory with (I/O adj1 buffer))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 15:47			S41
41	BRS	22	((processor CPU) with (I/O adj1 buffer)) and (memory with (I/O adj1 buffer)) and MPEG	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 15:44			S42
42	BRS	9	S42 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 15:47			S43
43	BRS	69	((processor CPU) near3 (I/O adj1 buffer)) and (memory near3 (I/O adj1 buffer))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 15:47			S44
44	BRS	57	S44 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:28			S45

	Type	Hits	Search Text	Dbs	Time Stamp	Comments	Error Definition	Errors	Ref #
45	BRS	2	(error with re\$1authenticat\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:27				S46
46	BRS	1919	(error with authenticat\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:36				S47
47	BRS	31	(error same re\$1authenticat\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:27				S48
48	BRS	9	S48 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:38				S49
49	BRS	134	(error with (protected adj1 data))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:37				S50
50	BRS	22	(error with (protected adj1 data)) with (transform\$5 DCT compress\$3 encod\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:46				S51
51	BRS	18	S51 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:47				S52
52	BRS	260	((encrypt\$3 key) with (protected adj1 data))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:47				S53
53	BRS	125	((encrypt\$3 key) near3 (protected adj1 data))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:49				S54
54	BRS	45	S54 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:52				S55
55	BRS	7	((encrypt\$3 key) near3 (protected adj1 data)) with (transform\$5 DCT compress\$3 encod\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:48				S56

	Type	Hits	Search Text	Dbs	Time Stamp	Comments	Error Definition	Error	Ref #
56	BRS	10	((encrypt\$3 adj1 key) near3 (protected adj1 data))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:51				S57
57	BRS	40	((encrypt\$3 adj1 key) with (protected adj1 data))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 16:52				S58
58	BRS	10	S58 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:06				S59
59	BRS	1	(channel with "encryption key register")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:03				S60
60	BRS	277	(channel with (key near3 register))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:05				S61
61	BRS	5	(channel with ((encryption adj1 key) near3 register))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:04				S62
62	BRS	8	(channel with encryption with (key near3 register))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:05				S63
63	BRS	244	S61 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:16				S64
64	BRS	19	S61 and encryption and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/28 17:16				S65
65	BRS	0	(CPU processor) adj1 "with" adj1 (I/O adj1 buffer)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 11:30				S66
66	BRS	177	(CPU processor) near3 (I/O adj1 buffer)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:59				S67

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Error	Ref #
67	BRS	128	((CPU processor) adj3 (I/O adj1 buffer)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:16				S69
68	BRS	99	S69 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:43				S70
69	BRS	43	(S69 and (MPPEG encod\$3 compress\$3 transform\$5)) and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 11:34				S71
70	BRS	0	((memory) adj3 (I/O adj1 buffer)) with ((CPU processor) near3 cache)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:17				S72
71	BRS	0	((memory) near3 (I/O adj1 buffer)) with ((CPU processor) near3 cache)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:17				S73
72	BRS	5	((memory) near3 (I/O adj1 buffer)) same ((CPU processor) near3 cache)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:20				S74
73	BRS	560	((memory) near3 (I/O adj1 buffer))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:43				S75
74	BRS	0	((memory) near3 "with" near3 (I/O adj1 buffer))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:21				S76
75	BRS	72	((memory) adj1 (I/O adj1 buffer))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:21				S77
76	BRS	50	S77 and @ad<"20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:21				S78
77	BRS	191	((memory) near1 (I/O adj1 buffer))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:43				S79

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors	Ref #
78	BRS	146	S79 and @ad < "20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:59				S80
79	BRS	233	(CPU processor) with (I/O adj1 buffer) with memor\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:59				S81
80	BRS	169	S81 and @ad < "20010205"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/29 12:59				S82
81	BRS	5053	382/166,250,710/68,714/48-56,723,746,747.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/30 09:21				S83
82	BRS	3581	341/94;348/425.2;365/189.05;375/240.27;380/217,269.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/30 09:22				S84

10/022,870

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JNL = Journal or Magazine CNF = Conference STD = Standard

1 An adaptive, perception-driven error spreading scheme in continuous media streamingVaradarajan, S.; Ngo, H.Q.; Srivastava, J.;
Distributed Computing Systems, 2000. Proceedings. 20th International Conference on , 10-13 April 2000
Pages: 475 - 483[\[Abstract\]](#) [\[PDF Full-Text \(184 KB\)\]](#) IEEE CNF**2 Applications of YK algorithm to the Internet transmission of Web-data: implementation issues and modifications**Banerji, A.; En-hui Yang;
Data Compression Conference, 2000. Proceedings. DCC 2000 , 28-30 March 2000
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3 Voice and video over ATM based cellular networks

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4 Wireless video performance through BLAST testbed

Haitao Zheng; Samardzija, D.;
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Pages: 141 - 146

[Abstract] [PDF Full-Text (419 KB)] IEEE CNF

5 Error spreading: reducing bursty errors in continuous media streaming

Ngo, H.Q.; Varadarajan, S.; Srivastava, J.;
Multimedia Computing and Systems, 1999. IEEE International Conference
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Pages: 314 - 319 vol. 1

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6 Performance evaluation of video signals at burst level in an ATM environment

Choi Yiu Kuen; Lo, R.; Husein, S.;
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[Abstract] [PDF Full-Text (432 KB)] IEEE CNF

7 Restart marker regulation technique for progressive JPEG image coding in mobile communications

Tien-Hsu Lee; Hsiu-Hua Hsu; Pao-Chi Chang;
Communications Letters, IEEE , Volume: 4 , Issue: 12 , Dec. 2000
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[Abstract] [PDF Full-Text (64 KB)] IEEE JNL

8 Recognizing voice over IP: a robust front-end for speech recognition on the world wide web
Pelaez-Moreno, C.; Gallardo-Antolin, A.; Diaz-de-Maria, F.;
Multimedia, IEEE Transactions on , Volume: 3 , Issue: 2 , June 2001
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[Abstract] [PDF Full-Text (156 KB)] IEEE JNL

9 Redundant states in test control block design
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Pages: 211 - 218

[Abstract] [PDF Full-Text (456 KB)] IEEE CNF

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Relevance scale

1 Robust compression and transmission of MPEG-4 video

Steven Gringeri, Roman Egorov, Khaled Shuaib, Arianne Lewis, Bert Basch

October 1998 **Proceedings of the seventh ACM international conference on Multimedia (Part 1)**Full text available: [pdf\(1.46 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper discusses issues related to the delivery of MPEG-4 video over the Internet and wireless channels. MPEG-4's built-in error resilience capabilities such as flexible re-synchronization markers, data partitioning, header protection, reversible VLCs, and forced intra-frame refresh are described. Methods for using these techniques to build a "smart" network decoder are discussed, and the decoder's video quality is measured for various channel error conditions. The effective ...

Keywords: MPEG-4, error mitigation, error resilience, error resilience, robust video**2 Robust MPEG video watermarking technologies**

Jana Dittmann, Mark Stabenau, Ralf Steinmetz

September 1998 **Proceedings of the sixth ACM international conference on Multimedia**Full text available: [pdf\(1.03 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**Keywords:** copyright protection, digital watermarking for MPEG video, security and the media

3 Error control techniques for interactive low-bit rate video transmission over the Internet

Injong Rhee
October 1998

ACM SIGCOMM Computer Communication Review , Proceedings of the ACM SIGCOMM '98 conference on Applications, technologies, architectures, and protocols for computer communication, Volume 28 Issue 4

Full text available: [pdf\(1.49 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A new retransmission-based error control technique is presented that does not incur any additional latency in frame playback times, and hence are suitable for interactive applications. It takes advantage of the motion prediction loop employed in most motion compensation-based codecs. By correcting errors in a reference frame caused by earlier packet loss, it prevents error propagation. The technique rearranges the temporal dependency of frames so that a displayed frame is referenced for the decode ...

4 MPEG-4: an object-based multimedia coding standard supporting mobile applications

Atul Puri, Alexandros Eleftheriadis
June 1998

Mobile Networks and Applications, Volume 3 Issue 1

Full text available: [pdf\(747.80 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The ISO MPEG committee, after successful completion of the MPEG-1 and the MPEG-2 standards is currently working on MPEG-4, the third MPEG standard. Originally, MPEG-4 was conceived to be a standard for coding of limited complexity audio-visual scenes at very low bit-rates; however, in July 1994, its scope was expanded to include coding of scenes as a collection of individual audio-visual objects and enabling a range of advanced functionalities not supported by other standards. One of the ke ...

5 A new transport protocol for broadcasting/multicasting MPEG-2 video over wireless ATM access networks

Hairuo Ma, Magda El Zarki
July 2002

Wireless Networks, Volume 8 Issue 4

Full text available: [pdf\(201.01 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Because of the telecommunications de-regulation act and progress in wireless technologies, we will see the co-existence of heterogeneous broadband access infrastructures in the broadband video service industry in the near future. In this paper, we addressed the error control issue when transmitting MPEG-2 video streams over wireless access networks for broadband video broadcast or multicast services. An end-to-end transport protocol based on ATM and wireless ATM technologies is proposed. For vid ...

Keywords: FEC, MPEG-2 broadcast/multicast, WATM, header redundancy, real-time, video quality

6 Error spreading: a perception-driven approach to handling error in continuous media streaming

Srivatsan Varadarajan, Hung Q. Ngo, Jaideep Srivastava
February 2002 **IEEE/ACM Transactions on Networking (TON)**, Volume 10 Issue 1

Full text available: [pdf\(377.04 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

With the growing popularity of the Internet, there is increasing interest in using it for audio and video transmission. Perceptual studies of audio and video viewing have shown that viewers find bursty losses, mostly caused by congestion, to be the most annoying disturbance, and hence these are critical issues to be addressed for continuous media streaming applications. Classical error handling techniques have mostly been geared toward ensuring that the transmission is correct, with no attention ...

Keywords: Bursty error, error spreading, multimedia

7 HDR and perception: Perception-motivated high dynamic range video encoding

Rafal Mantiuk, Grzegorz Krawczyk, Karol Myszkowski, Hans-Peter Seidel
August 2004 **ACM Transactions on Graphics (TOG)**, Volume 23 Issue 3

Full text available: [pdf\(3.23 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Due to rapid technological progress in high dynamic range (HDR) video capture and display, the efficient storage and transmission of such data is crucial for the completeness of any HDR imaging pipeline. We propose a new approach for inter-frame encoding of HDR video, which is embedded in the well-established MPEG-4 video compression standard. The key component of our technique is luminance quantization that is optimized for the contrast threshold perception in the human visual system. The quant ...

Keywords: DCT encoding, HDR video, MPEG-4, adaptation, high dynamic range, luminance quantization, tone mapping, video compression, video processing, visual perception

8 Session 4: video processing and transformation: Rate adaptation transcoding for precoded video streams

ZhiJun Lei, Nicolas D. Georganas
December 2002 **Proceedings of the tenth ACM international conference on Multimedia**

Full text available: [pdf\(186.66 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In order to transmit pre-encoded digital video over heterogeneous networks, it is necessary to employ transcoding techniques that convert pre-encoded video streams into streams having different bit rates and quality. The specified problem is referred to as rate shaping or rate adaptation. In this work, we propose a new rate control scheme for H.263+ based video transcoding. The proposed rate control scheme is comprised of Frame-Layer bit allocation and Macroblock-Layer rate control. At the frame ...

Keywords: rate adaptation, rate quantization, scene variations, video transcoding

9 A feature-based algorithm for detecting and classifying scene breaks

Ramin Zabih, Justin Miller, Kevin Mai

January 1995 **Proceedings of the third ACM international conference on Multimedia**

Full text available: [✎.htm\(58.14 KB\)](#)

Additional Information: [full citation](#), [citations](#), [index terms](#)

Keywords: content-based indexing and retrieval, video processing

10 Performance of a software MPEG video decoder

Ketan Patel, Brian C. Smith, Lawrence A. Rowe

September 1993 **Proceedings of the first ACM international conference on Multimedia**

Full text available: [✎.pdf\(63.31 KB\)](#) [✎.ps\(571.15 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

11 Exploiting Video: Panoramic video capturing and compressed domain virtual camera control

Xinding Sun, Jonathan Foote, Don Kimber, B. S. Manjunath

October 2001 **Proceedings of the ninth ACM international conference on Multimedia**

Full text available: [✎.pdf\(1.86 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A system for capturing panoramic video and a novel method for corresponding compressed domain virtual camera control is presented. It targets applications such as classroom lectures and video conferencing. The proposed method is based on the FlyCam panoramic video system that is designed to produce high resolution and wide-angle video sequences by stitching the video pictures from multiple stationary cameras. The panoramic video sequence is compressed into an MPEG-2 stream for delivery. The prop ...

12 XMovie: architecture and implementation of a distributed movie system

Ralf Keller, Wolfgang Effelsberg, Bernd Lamparter

October 1995 **ACM Transactions on Information Systems (TOIS)**, Volume 13 Issue 4

Full text available: [✎.pdf\(1.91 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We describe a system for storing, transmitting, and presenting digital movies in a computer network. The hardware used in the system is standard hardware, as found in typical workstations today; no special hardware is required, but if available it can be used to provide better performance. The XMovie system has several innovative features. First, it contains a new algorithm for the gradual adaptation of the color lookup table during the presentation of the movie to ensure optimal color qual ...

Keywords: digital video, distributed multimedia system, software motion picture, transmission protocol

13 Videoconferencing on the Internet

Thierry Turletti, Christian Huitema

June 1996 **IEEE/ACM Transactions on Networking (TON)**, Volume 4 Issue 3

Full text available: [PDF \(1.49 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)



14 Special issue on wireless extensions to the internet: Prediction-based monitoring in sensor networks: taking lessons from MPEG

Samir Goel, Tomasz Imielinski

October 2001 **ACM SIGCOMM Computer Communication Review**, Volume 31 Issue 5

Full text available: [PDF \(1.62 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)



In this paper we discuss the problem of monitoring data sensed in large sensor networks. A sensor typically runs on a battery having a limited lifetime. In order to increase the lifetime of a sensor it is important that the mechanisms used in monitoring them be energy-efficient. In this paper, we propose a new paradigm called Prediction-based monitoring for energy-efficient monitoring. We show that the paradigm can be visualized as a watching of a "sensor movie" and that concepts from MPEG ma ...

15 Transmitting MPEG-4 video streams over the Internet: problems and solutions

Gerald Kühne, Christoph Kuhmünch

October 1999 **Proceedings of the seventh ACM international conference on Multimedia (Part 2)**

Full text available: [PDF \(516.94 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)



Keywords: MPEG-4, RTP payload, real-time transport protocol, video on demand

16 Adaptive foveation of MPEG video

T. H. Reeves, J. A. Robinson

February 1997 **Proceedings of the fourth ACM international conference on Multimedia**

Full text available: [PDF \(1.03 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



Keywords: communications/networking/VOD, compression/decompression analysis, foveated coding, logical/conceptual manipulation of video

17 Audio Processing: A compressed domain beat detector using MP3 audio bitstreams

Ye Wang, Miikka Viiro

October 2001 **Proceedings of the ninth ACM international conference on Multimedia**

Full text available: [pdf\(260.20 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents a novel beat detector that processes MPEG-1 Layer III (known as MP3) encoded audio bitstreams directly in the compressed domain. Most previous beat detection or tracking systems dealing with MIDI or PCM signals are not directly applicable to compressed audio bitstreams, such as MP3 bitstreams. We have developed the beat detector as a part of a beat-pattern based error concealment scheme for streaming music over error prone channels. Special effort was used to obtain a tailored ...

Keywords: MP3, MPEG audio, beat detection, beat tracking, bitstream processing, compressed domain processing, error concealment

18 Adaptive source rate control for real-time wireless video transmission

Hang Liu, Magda El Zarki

June 1998 **Mobile Networks and Applications**, Volume 3 Issue 1

Full text available: [pdf\(371.56 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Hybrid ARQ schemes can yield much better throughput and reliability than static FEC schemes for the transmission of data over time-varying wireless channels. However these schemes result in extra delay. They adapt to the varying channel conditions by retransmitting erroneous packets, this causes variable effective data rates for current PCS networks because the channel bandwidth is constant. Hybrid ARQ schemes are currently being proposed as the error control schemes for real-time video tra ...

19 Packet loss effects on MPEG video sent over the public Internet

Jill M. Boyce, Robert D. Gaglianella

September 1998 **Proceedings of the sixth ACM international conference on Multimedia**

Full text available: [pdf\(954.30 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: Internet packet loss, MPEG, streaming video

20 Multimedia coding and security: Content-based UEP: a new scheme for packet loss recovery in music

streaming

Ye Wang, Ali Ahmamiemi, David Isherwood, Wendong Huang

November 2003 **Proceedings of the eleventh ACM international conference on Multimedia**

Full text available:  pdf(415.11 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bandwidth efficiency and error robustness are two essential and conflicting requirements for streaming media content over error-prone channels, such as wireless channels. This paper describes a new scheme called content-based unequal error protection (C-UEP), which aims to improve the user-perceived QoS in the case of packet loss. We use music streaming as an example to show the effectiveness of the new concept. C-UEP requires only a small fraction of the redundancy used in existing forward error ...


Keywords: audio coding and streaming, content-based unequal error protection (C-UEP), error robustness, packet loss recovery, prioritized resource allocation, user-perceived QoS

Results 1 - 20 of 200


Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [next](#)


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